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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/688,933	10/17/2000	Koichi Takiguchi	32307-167197	2516

26694 7590 12/05/2003

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EXAMINER

PHAN, HANH

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 12/05/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/688,933

Applicant(s)

TAKIGUCHI ET AL.

Examiner

Hanh Phan

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Applicant's election without traverse of Species A, Figures 1-8, directed to claims 1-6 in Paper No. 5 is acknowledged.
2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taga et al (US Patent No. 6,181,449) in view of Jinguji et al (US Patent No. 5,572,611).

Regarding claim 1, referring to figure 1, Taga discloses a dispersion slope equalizer (i.e., dispersion equalizer elements 5, Fig. 1) for compensating signal distortion caused by dispersion slope of a transmission line when transmitting lightwaves with plural wavelength signals in the transmission line characterized by comprising:

N waveguides, N output wavelength demultiplexer and/or N input wavelength multiplexer (Fig. 1), and the N waveguides being connected to outputs of the

wavelength demultiplexer (i.e., arrayed optical waveguide wavelength demultiplexing circuit 3, Fig. 1) and/or inputs of the wavelength multiplexer (i.e., arrayed optical waveguide wavelength multiplexing circuit 4, Fig. 1)(from col. 3, line 45 to col. 5, line 9).

Taga differs from claim 1 in that he fails to teach the dispersion slope equalizer comprising K group delay controllers and in the group delay controllers, one or both of input/output parts of lattice-form optical circuits being set on the N waveguides;

wherein the lattice-form optical circuits are composed of two waveguides interleaved with at least two directional couplers, and the two waveguides are designed so that optical path lengths between said directional couplers are different. However, Jinguji teaches a dispersion slope equalizer comprising K group delay controllers and in the group delay controllers, one or both of input/output parts of lattice-form optical circuits being set on the N waveguides; wherein the lattice-form optical circuits are composed of two waveguides interleaved with at least two directional couplers, and the two waveguides are designed so that optical path lengths between said directional couplers are different (Fig. 3, col. 53, lines 44-60 and see abstract section). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the variable group delay dispersion equalizer using lattice form as taught by Jinguji in the system of Taga. One of ordinary skill in the art would have been motivated to do this since Jinguji suggests in column 3, lines 50-67 and col. 4, lines 1-14 that using such a variable group delay dispersion equalizer using lattice form has advantage of allowing compensating the dispersion of the signal.

Regarding claim 2, Taga further teaches the wavelength demultiplexer (3) and wavelength multiplexer (4)(Fig. 1) are arrayed-waveguide gratings.

Regarding claims 3 and 5, the combination of Taga and Jinguji teaches the group delay controllers are connected to N input wavelength multiplexer and the N waveguides are connected to only inputs of the wavelength multiplexer (Fig. 1 of Taga and Fig. 3 of Jinguji).

Regarding claim 4, Taga further teaches the wavelength multiplexer (4)(Fig. 1) is an arrayed-waveguide grating.

Regarding claim 6, Taga further teaches the wavelength demultiplexer (3)(Fig. 1) is an arrayed-waveguide grating.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bergano (US Patent No. 6,137,604) discloses chromatic dispersion compensation in wavelength division multiplexed optical transmission systems.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (703)306-5840.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (703)305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

A handwritten signature in cursive script, appearing to read 'Hanh Phan', written over a horizontal line.

Hanh Phan

11/26/2003